



DEPARTMENT OF THE ARMY  
MISSISSIPPI VALLEY DIVISION, CORPS OF ENGINEERS  
P.O. BOX 80  
VICKSBURG, MISSISSIPPI 39181-0080

REPLY TO  
ATTENTION OF:

CEMVD-PD-SP

2 DEC 13

MEMORANDUM FOR Commander, St. Paul District

SUBJECT: Review Plan Approval for the Alvarado, Minnesota,  
Flood Risk Management Modifications to Existing Project,  
Section 408

1. References:

a. Memorandum, CEMVP-EC, 3 August 2012, subject: Review Plan for Alvarado Flood Risk Management Modifications to an Existing Project (encl 1).

b. Memorandum, CEIWR-RMC-WD, 11 February 2013, subject: Risk Management Center Endorsement-Alvarado, MN, Flood Risk Management Modifications to Existing Project, Section 408 Review Plan (encl 2).

c. EC 1165-2-214, 15 December 2012, subject: Civil Works Review Policy.

2. The enclosed Review Plan (RP) for the Alvarado, Minnesota, Flood Risk Management Modifications to Existing Project, Section 408 has been prepared in accordance with EC 1165-2-214. The RP has been coordinated with the Upper District Support Team and the Risk Management Center, who concurred with the plan in reference 1.b. of the enclosed memorandum.

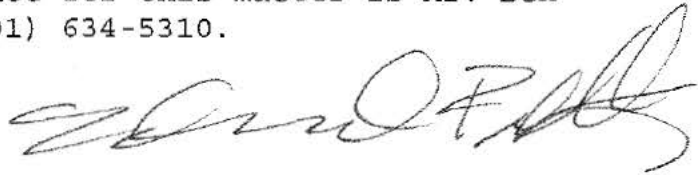
3. I hereby approve this RP, which is subject to change as circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this RP or its execution will require new written approval from this office. Non-substantive changes to this RP do not require further approval. The District should post the approved RP to its web site.

Report Documentation Page				Form Approved OMB No. 0704-0188	
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CEMVD-PD-SP

SUBJECT: Review Plan Approval for the Alvarado, Minnesota,  
Flood Risk Management Modifications to Existing Project,  
Section 408

4. The MVD point of contact for this matter is Mr. Ben  
Robinson, CEMVD-PD-SP, (601) 634-5310.

A handwritten signature in dark ink, appearing to read "Edward E. Belk, Jr.", with a stylized, cursive script.

2 Encls

EDWARD E. BELK, JR., P.E., SES  
Director of Programs



**DEPARTMENT OF THE ARMY**  
ST. PAUL DISTRICT, CORPS OF ENGINEERS  
180 FIFTH STREET EAST, SUITE 700  
ST. PAUL, MN 55101-1678

CEMVP-EC

3 Aug 2012


MEMORANDUM FOR: USACE IWR Risk Management Center (CEIWR-RMC-Western /  
Mr. Colin Krumdieck) 12300 W Dakota Ave, Lakewood CO 80228

SUBJECT: Review Plan for Alvarado Flood Risk Management Modifications to an Existing  
Project

1. The review plan for the subject project is attached for the Risk Management Center's review and endorsement for approval. The Review Plan was prepared in accordance with EC 1165-2-209 and QMS 08502-MVD.
2. The Project is currently in the implementation phase with engineering and design being done by an engineering consultant to the City of Alvarado, Minnesota. The Project includes a proposed levee realignment to improve stability. In accordance with 33 U.S.C. 408, the proposed action requires Corps review and Chief of Engineers approval. As required by EC 1165-2-209, approval of the Review Plan is requested.
3. The point of contact for this memorandum is the project manager, Mr. Joseph Mose, at 651-290-5567.

Encls

1. Review Plan
2. Review Plan Checklist

  
MICHAEL J. BART, P.E.  
Chief, Engineering and Construction Division



**US Army Corps  
of Engineers®**  
St. Paul District

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## **Review Plan**

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# **Alvarado Flood Risk Management Modifications to Existing Project Section 408 Review**

## **Alvarado, MN**

**Engineering and Design Phase  
and  
Construction Phase**

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# Review Plan

## Table of Contents

1	Purpose	1
2	References	1
3	Project Description and Background Information .....	2
3.1	Location.....	2
3.2	Authorization .....	2
3.3	Project Sponsor .....	2
3.4	Project Background.....	2
3.5	Prior Reports and Studies .....	4
3.6	Current Studies .....	4
3.7	Project Description.....	5
3.8	Design, Engineering, and Construction Products.....	5
3.9	Potential Project Risk Factors .....	5
3.10	Estimated Cost of Project and Period of Construction .....	5
4	Review Plan Development and Management .....	7
4.1	Review Management Organization (RMO) and their Roles and Responsibilities.....	7
4.1.1	Risk Management Center (RMC).....	8
4.1.2	Mississippi Valley Division (MVD) .....	8
4.2	Points of Contact for the Review Plan .....	8
4.2.1	Review Management Organization POCs .....	8
4.2.2	MSC Organization POCs .....	8
4.2.3	District POCs.....	8
5	Quality Review Teams and Scope of Reviews.....	9
5.1	Design (aka District) Quality Control (DQC) .....	9
5.1.1	DQC Team .....	9
5.1.2	Scope of DQC Reviews .....	9

Alvarado Flood Risk Management – Modifications to Existing Project  
Review Plan

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5.2	Agency Technical Review (ATR) .....	9
5.2.1	ATR Team .....	10
5.2.2	Scope of ATR Reviews .....	12
5.3	Independent External Peer Review (IEPR) Type II Safety Assurance Review (SAR).....	13
5.3.1	IEPR Type II SAR Team.....	13
5.3.2	Scope of Type II IEPR Reviews.....	13
5.4	Methodology and Model Certification .....	15
5.5	Policy Compliance / Legal Review Team.....	15
6	Method of Providing Review Comments .....	15
6.1	Design Quality Control (DQC) .....	15
6.2	Agency Technical Review (ATR) .....	15
6.2.1	Documentation of ATR.....	15
6.2.2	ATR Issues .....	16
6.2.3	ATR Completion .....	17
6.3	Independent External Peer Review (IEPR) .....	17
7	Review Schedule and Review Costs .....	18
7.1	Review Plan Schedule .....	18
7.2	DQC Schedule.....	18
7.3	ATR Schedule and Cost .....	18
7.4	IEPR Schedule and Cost.....	19
8	Review Teams	19
8.1	Design Quality Control (DQC) Reviewers .....	19
8.2	ATR Reviewers.....	20
8.3	Independent External Peer Reviewers.....	21
9	Posting of Review Plans and Public Comment.....	21
10	History of Review Plan Updates.....	22
11	Attachments	22
Attachment 1:	Sample ATR Certification Statement.....	1
Attachment 2:	Guidance for Reviews.....	1



# Review Plan

## 1 Purpose

This Review Plan (RP) defines the scope and level of review for the local sponsor proposed modifications to the Alvarado, Minnesota Flood Risk Management Project. The proposed modifications require Corps of Engineers approval per the provisions of 33 U.S.C. 408.

This Review Plan was developed in accordance with Engineer Circular (EC) 1165-2-209, “Civil Works Review Policy,” dated 31 January, 2010 as well as with QMS 8502-MVD, “Review Plans for Technical Products”.. The EC establishes procedures to ensure the quality and credibility of Corps implementation and operations and maintenance documents and work products.

All appropriate levels of review (DQC, ATR, IEPR, Policy and Legal Review, and Model Review and Certification) will be addressed in this RP. The RP identifies the most important skill sets needed in the reviews and the objective of the review and the specific advice sought, thus setting the appropriate scale and scope of review for the individual document.

## 2 References

a.	ER 1105-2-100	<i>Planning Guidance Notebook</i> , 20 November 2007
b.	ER 1110-1-12	<i>Engineering and Design - Quality Management</i> , 21 July 2006, incorporating Change 1, 30 September 2006
c.	ER 1110-2-1150	<i>Engineering and Design for Civil Works</i> , 31 August 1999
d.	EC 1165-2-209	<i>Civil Works Review Policy</i> , 31 January 2010, with Errata Sheet 1 dtd 15 July 2010
e.	QMS 8502-MVD	<i>Review Plans for Technical Products</i>
f.	<i>WRDA 2007 H. R. 1495 Public Law 110-114</i> , 8 Nov 2007	
g.	<i>33 U.S.C. 408</i>	
h.	<i>Clarification Guidance on Policy and Procedural Guidance for the Approval of Modifications and Alterations for Corps of Engineers Projects</i> , USACE, November 17, 2008	

### 3 Project Description and Background Information

#### 3.1 Location

The City of Alvarado, Minnesota is located on the Snake River about 20 miles north of Grand Forks, North Dakota (*see Figure 1*).

#### 3.2 Authorization

The existing project at Alvarado was authorized under Section 205 of the 1948 Flood Control Act, as amended, and was completed in 1996. In accordance with 33 U.S.C. 408, non-Federal proposals to modify existing Corps projects will be evaluated by the Corps in accordance with Corps regulations and policy.

#### 3.3 Project Sponsor

The City of Alvarado, Minnesota is the project sponsor.

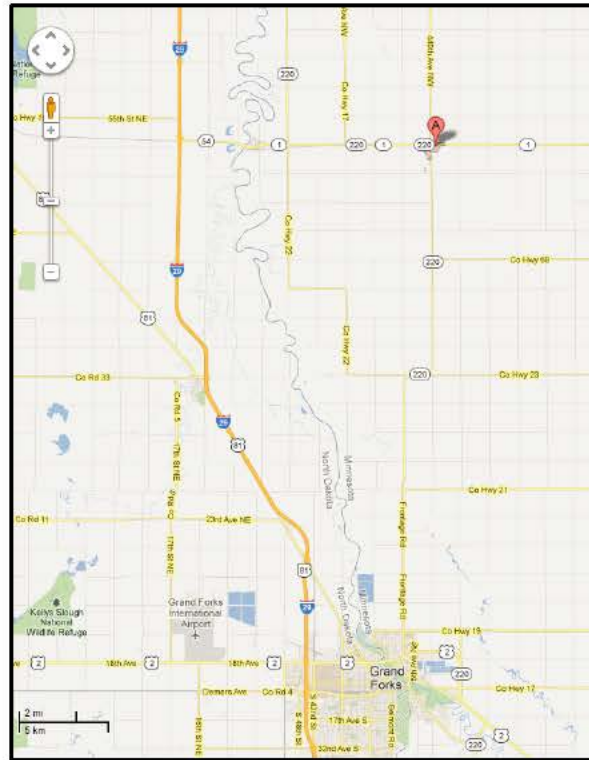


FIGURE 1: ALVARADO LOCATION MAP

#### 3.4 Project Background

Built in the mid-1990s by the U.S. Army Corps of Engineers (USACE), the existing levee flood control system for the City of Alvarado (*see Figure 2*) has withstood several floods of the Snake River since its construction. Although the levee system has performed adequately since its completion and has been shown on Federal Emergency Management Agency's (FEMA) current flood insurance rate maps (FIRMs) as providing protection from the 100-year flood (base flood), FEMA is requiring documentation be submitted that demonstrates that the levee and associated structures meet the requirements of the Code of Federal Regulations, Title 44, Section 65.10 (44DFR65.10), titled "Mapping of Areas Protected by Levee Systems." FEMA implemented a policy requiring an engineering evaluation of all levees shown on DFIRMs (Digital Flood Insurance Rate Maps) through the National Flood Insurance Program (NFIP). In order to obtain FEMA accreditation, the levee owner must provide data and documentation to FEMA demonstrating that the levee system provides base (1-percent annual chance of occurrence) flood protection and that the system meets the minimum design, operations, and maintenance standards, as set forth in Title 44 of the Code of Federal Regulations (CFR), Section 65.10 (44 CFR §65.10). The documentation must include design criteria (i.e., freeboard, closures, embankment protection and stability, foundation stability, settlement, interior drainage), operations, and maintenance. FEMA and the City of Alvarado (City) entered into a Provisionally Accredited Levee (PAL) agreement that became effective on April 30, 2009 in order to allow additional time for the City to prepare the necessary documentation.



# Alvarado Flood Risk Management – Modifications to Existing Project Review Plan



**FIGURE 2: LAYOUT OF THE EXISTING LEVEE SYSTEM**

### 3.5 Prior Reports and Studies

The City of Alvarado retained the services of Barr Engineering Company (Barr) to perform engineering assessments of the existing levee system and prepare the necessary compliance documentation for meeting NFIP requirements. Barr conducted a thorough review of relevant documents to gain a better understanding of the original design assumptions, subsequent system improvements, monitoring data, and potential solutions for the unstable river bank. Below is a summary of documentation for the Alvarado, MN Levee system:

- 1996 FEMA Flood Insurance Study (FIS)
- USACE Detailed Project Report, September, 1987
- USACE As-built Drawings, October, 1994
- USACE Operations and Maintenance Manual, June 1996
- USACE Alvarado Inspection Report, June, 2006
- USACE Periodic Inspection Report dated June, 2010
- Flood Insurance Documentation

### 3.6 Current Studies

As stated above, the City of Alvarado retained the services of and A/E firm (Barr Engineering Company) to perform engineering assessments of the existing levee system and prepare the necessary compliance documentation for meeting NFIP requirements. Barr Engineering has prepared a Phase I Engineer's Report and is developing plans and specifications and a construction cost estimate for project implementation. The Engineer's Report includes supporting technical analysis for hydrology and hydraulics, environmental engineering, geotechnical, structural, mechanical, and civil design along with a detailed cost estimate are presented in appendices. Moving portions of the existing levee and embankment near existing flood walls along the banks of the Snake River are the primary features of the proposed modification. These actions are proposed to resolve existing levee stability issue related to unstable Snake River banks.

Although it was known that there was an unstable river bank that needed repair, a review of available data and preliminary engineering analysis provided the data and information to identify other levee system improvements that must be performed prior to submitting certification documentation to FEMA. The purpose of the current engineering and design efforts is to provide the design of necessary repairs include raising significant portions of the existing levee, realigning portions of the existing levee, new levee construction, and other improvements to meet FEMA and the USACE requirements.

Since the proposed actions include levee realignment, the proposed project is classified as the type of alternation/modification under 33 U.S.C.408 that require approval of the Chief of Engineers. The proposed actions exceed the threshold of project approval under 33 CFR 208.10 whose approval has been delegated to the District Engineer. This Review Plan details the reviews required by EC 1165-2-209 Civil Works Review Policy for modifications submitted for approval under 33 U.S.C. 408.

### **3.7 Project Description**

The configuration of the proposed flood protection system (*see Figure 3*) is substantially similar to the original USACE engineering design (*see Figure 2*). Significant modifications to the existing levee system are required in order for the flood protection system to obtain FEMA accreditation and to meet current USACE design criteria. Upgrading the flood protection system consists of the following major tasks:

- Bank unloading and realignment of the levee.
- Constructing new floodwalls.
- Placement of erosion control features.
- Stream bank restoration along the Snake River.
- Correct and complete all inspection work items per USACE Periodic Inspection Report dated June 2010.

### **3.8 Design, Engineering, and Construction Products**

As stated in Paragraph 3.6, the implementation documents are being developed by the Project Sponsor's A/E firm (Barr Engineering) with the purpose of providing a detailed plan for construction. A construction contractor will complete the construction. Barr Engineering will complete the O&M Manual upon completion of construction. The design, engineering, and construction products include:

- Phase I Engineer's Report (already completed, will not be reviewed for comments, will only be reviewed for background information)
- Design Documentation Report
- Environmental Assessment
- Construction Bidding Documents (Plans and Specifications)
- O&M Manual

### **3.9 Potential Project Risk Factors**

Since the purpose of the project is to improve the reliability of the flood damage reduction benefits to the city of Alvarado, it is justified by life safety; thus, the project's failure would pose a significant threat to human life. As such, the Corps' review requirements for Agency Technical Review (ATR) and Independent External Peer Review (IEPR) must be followed. The major risk factors are anticipated to be slope stability, impacts to existing structures, internal drainage elements, and temporary closure features.

### **3.10 Estimated Cost of Project and Period of Construction**

The estimated of construction cost of the proposed modifications to the project are in the range of \$2,000,000 to \$4,000, 000. It is anticipated that the construction of the project modifications will take place in calendar year 2013.



# Alvarado Flood Risk Management – Modifications to Existing Project Review Plan



**FIGURE 3: PROPOSED MODIFICATIONS TO THE LEVEE SYSTEM**

## **4 Review Plan Development and Management**

A presentation was made to the MVP Review Plan Committee on 27 Jan 2012. Based on the presentation and discussion, the following recommendations were made. Additional requirements for each of the necessary reviews will be discussed in subsequent sections of the Review Plan.

- Design Quality Control (essentially the same thing as District Quality Control) will be performed by Barr Engineering per their internal QA/QC procedures. Evidence of their DQC efforts for this work shall be submitted to the ATR Team along with the submittal of the products to be reviewed.
- Agency Technical Review (ATR) will be performed by the St. Paul District USACE (MVP). The primary areas of focus will be the Geotechnical, Hydraulics, Structural, and Civil-Site aspects of the Design Documentation Report and the Plans and Specifications documents. Since the engineering and design documents are being prepared outside of the Corps, an expanded ATR team will be utilized to ensure Corps criteria in other facets such as Environmental, Cultural, and any other technical areas is followed. The Barr Engineering prepared Phase I Engineering Report will be provided for reference, but not considered part of ATR documents subject to review.
- Type I IEPR is not required since the project products are not decision documents.
- Type II IEPR Safety Assurance Review is required for this project based on Corps review policy for levee safety projects. The IEPR will be conducted by an independent review team contracted by the Project Sponsor per USACE procedural guidance for 408 projects. The Corps will be involved in reviewing the Scope of Work for the IEPR, as well as involved in reviewing the comments and responses generated by the IEPR review.
- Model Review and Certification is not required since this project is not in the planning phase. It is expected that the A/E firm that is preparing the design, engineering, and construction documents will utilize industry standard software programs, including USACE HEC programs. The A/E design firm will be required to identify in the Design Documentation Report all design software that is utilized.

### **4.1 Review Management Organization (RMO) and their Roles and Responsibilities**

Since this project is in the “implementation phase” of development, and since it a “flood risk management” project, the Review Management Organization (RMO) will be the USACE Risk Management Center (RMC). The USACE Major Subordinate Command (MSC) that is responsible for approving the Review Plan and providing general oversight of the entire process is the Mississippi Valley Division (MVD) headquarters.

#### **4.1.1 Risk Management Center (RMC)**

The RMC is responsible for:

- Reviewing and endorsing this Review Plan.
- Submitting the Review Plan to the MVD Commander for approval.
- Approving the ATR and IEPR Teams for this project and its reaches/features.
- Assisting in developing the “Charge” for each of the ATR and IEPR teams.

#### **4.1.2 Mississippi Valley Division (MVD)**

MVD is responsible for:

- Approving the Review Plan.
- Assisting in developing the “Charge” for each of the ATR and IEPR teams.
- Overseeing the ATR and ensuring that reviews are properly conducted.

### **4.2 Points of Contact for the Review Plan**

#### **4.2.1 Review Management Organization POCs**

Risk Management Center (RMC)	Primary	Colin Krumdieck	303-963-4541
	Alternate	Bill Empson	913-787-5356

#### **4.2.2 MSC Organization POCs**

Mississippi Valley Division (MVD)	Div Levee Safety Program Manager	Pete Montalbano	601-634-7162
	Division Program Manager	Elizabeth Ivy	601-634-5310

#### **4.2.3 District POCs**

St. Paul District – Chief of Engineering-Construction Division	Michael Bart	651-290-5303
St. Paul District – Quality and Review Manager	James Mosner	651-290-5512
St. Paul District – Project Manager	Joe Mose	651-290-5567



## **5 Quality Review Teams and Scope of Reviews**

All work products identified in Paragraph 3.8 will undergo District (aka Design) Quality Control (DQC), Agency Technical Review (ATR), and Type II Independent External Peer Review (IEPR). Unique review teams will be formed for each of the review types and each review team will have a specific purpose/focus as defined in the following paragraphs.

### **5.1 Design (aka District) Quality Control (DQC)**

EC 1165-2-209 requires that a review called District Quality Control (DQC) be conducted for all projects. In the case of projects such as this one (i.e., modification of an existing project under the Section 408 authority), where the Project Sponsor can engage the services of an A/E firm (such as Barr Engineering) to prepare the engineering and design documents, this level of review is referred to as Design Quality Control rather than District Quality Control and will be performed by the A/E firm .

#### **5.1.1 DQC Team**

DQC Teams are typically composed of senior level specialists and functional experts within the organization that is preparing the engineering and design documents. Thus, in the case of this project, the A/E Firm (Barr Engineering) will perform the DQC of the engineering and design products.

The A/E firm shall provide the ATR team with the following information to ensure the DQC activities employed are appropriate and effective:

- Documentation of the A/E firm's internal QA/QC policy and procedures.
- A statement that their internal reviews will serve as the equivalent to the DQC review normally performed by USACE personnel when USACE prepares the design.
- A listing of the DQC reviewers (and their credentials) for each review.
- Copies of comments/results of each internal DQC review that is performed.

#### **5.1.2 Scope of DQC Reviews**

In general, DQC is the review of basic science and engineering work products focusing on ensuring the quality and credibility of the engineering and design information. It is managed by the organization performing the design in accordance with the organization's Quality Management Standards, and may be conducted by staff in the organization as long as they are not involved in the design.

DQC is required for all work products, reports, evaluations, and assessments. Quality control will also be monitored via local reviews, and Corps-led Higher Authority/vertical team conferences and reviews. The vertical team will be involved in the engineering and design review process and will be presented with information during the standard Corps checkpoints.

### **5.2 Agency Technical Review (ATR)**

EC 1165-2-209 requires that a review called Agency Technical Review (ATR) be conducted for all projects. An ATR is an in-depth review undertaken to ensure the quality and credibility of the

Alvarado Flood Risk Management – Modifications to Existing Project  
Review Plan

engineering and design information. The review is managed within USACE and is conducted by a qualified team outside of the organization that produced the project/product. The purpose of ATR is to ensure proper application of clearly established criteria, regulations, laws, codes, principles and professional practices.

Typically ATR Teams are to be lead by an individual from outside the MSC performing the design; however, precedent has been established at HQUSACE that for Section 408 projects an ATR team can be lead and staffed by qualified personnel within the Corps district in which the project is located.

### **5.2.1 ATR Team**

The ATR will be performed by a designated ATR Team in coordination with the Risk Management Center. The ATR teams are comprised of senior USACE personnel and may be supplemented by outside experts as appropriate; this will ensure that a review team with appropriate independence and expertise is assembled and a cohesive and comprehensive review is accomplished.

The ATR team leader may be one of the specialists and it is possible that one member could cover more than one discipline. For this project, as a minimum, the ATR team should consist of members that have experience in the disciplines of geotechnical, hydraulics, structural, and civil-site. Other disciplines/functions may be add to the ATR team as necessary, in which case the added team member(s) will have the appropriate experience and educational requirements.

Table 1 lists the various technical disciplines that may be needed for ATR review of the various design, engineering, and construction products.

Table 1 – ATR Disciplines Anticipated for the Project

Hydrology and Hydraulics Engineering  
Geotechnical Engineering  
Structural Engineering  
Civil-Site-Utility Engineering  
Levee Safety  
Planning/Recreation/Landscape Design  
Environmental/NEPA/Cultural  
Real Estate  
Construction

Specialized experience for each of the disciplines is summarized below:

#### **Hydraulics and Hydrology Engineering:**

The Hydraulics and Hydrology reviewer will ensure that the hydrologic and hydraulic analysis was properly completed and that the alternatives will achieve the desired flood stage in the benefitted area. The reviewer shall have experience designing flood control projects.

Alvarado Flood Risk Management – Modifications to Existing Project  
Review Plan

Geotechnical Engineering:

The Geotechnical reviewer will ensure that the designed project meets Corps standards, the design assumptions are reasonable, and the geotechnical analyzes are complete. The reviewer shall have experience designing earthen levees intended to protect life and property from threat of elevated flood waters.

Structural Engineering:

The Structural reviewer will ensure that the designed project meets Corps standards for structural features, the design analysis are complete, and the estimated quantities are reasonable. The reviewer shall have experience designing flood walls and closures structures

Civil Engineering:

The Civil reviewer will ensure that the designed project meets Corps standards for civil-site features and utility features, the design analyzes are complete, and the estimated quantities are reasonable.

Planning/Recreation/Landscape Design:

The recreation planner and/or landscape architect will review the recreation plan and landscape architecture features developed during the E&D phase. This will include review of recreational costs, unit day values, the proposed features and anticipated uses.

Levee Safety:

The reviewer(s) will ensure that the designed project meets Corps standards for flood damage reduction levees, the design analysis are complete, and the estimated quantities are reasonable.

Environmental/NEPA/Cultural:

The Environmental reviewer will be responsible for reviewing ecosystem restoration and mitigation plans and specs and ensuring the proper NEPA and cultural resource compliance activities were completed.

Real Estate:

The Real Estate reviewer will ensure that all of the lands necessary for the project are accounted for and properly documented.

Construction:

The reviewers will determine the constructability of the product and methods of construction for schedule creation, phasing, sequencing of activities. Construction will also address any safety issues that may arise during construction and the design and construction of any temporary roads or other measures that may be required or should be incorporated in the design documents.

### 5.2.2 Scope of ATR Reviews

The ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. The ATR teams will be provided draft and intermediate versions of documents so that team can become familiar with reach/element documents and provide “critical” comments, but that the primary ATR is on final products. The ATR will be on-going throughout product development, rather than a cumulative review performed at the end of the design, and will build upon any and all prior cycles of review. ATR is designed to be a relatively continuous process with reviews synchronized with the PDT’s production of products and supporting analyses. The purpose of the ATR is to:

- Review the non-Federal designers’ deliverables for completeness
- Perform QA audits periodically to ensure that the DQC process is in place and is followed
- Ensure the quality and credibility of the engineering and design information
- Ensure that the appropriate problems and opportunities are addressed
- Confirm that appropriate solutions are considered
- Assure that accurate cost, scheduling and associated risks are presented
- Confirm that the recommended solution is in accord with current policies
- Confirm that the design can be implemented in accordance with environmental laws and statutes.

The ATR criteria as stated in EC 1165-2-209 are as follows:

- Products will be reviewed against published guidance, including Engineering Regulations, Engineering Circulars, Engineering Manuals, Engineering Technical Letters, Engineering Construction Bulletins, Policy Guidance Letters, implementation guidance, project guidance memoranda, and other formal guidance memoranda issued by HQUSACE. Any justified and approved waivers should have been obtained from HQUSACE for any deviations from USACE guidance;
- The project meets the customer’s scope, intent and quality objectives as defined in the PMP;
- Concepts and project costs are valid;
- The non-Federal sponsor is aware of its requirements and concurs with the proposed recommendations;
- The design is feasible and will be safe, functional, constructible, environmentally sustainable, within the Federal interest, and economically justified according to policy;
- All relevant engineering and scientific disciplines have been effectively integrated;
- Appropriate computer models and methods of analysis were used and basic assumptions are valid and used for the intended purpose;
- The source, amount, and level of detail of the data used in the analysis are appropriate for the complexity of the project;

- The project complies with accepted practice within USACE;
- Content is sufficiently complete for the current phase of the project and provides an adequate basis for future development effort;
- Project documentation is appropriate and adequate for the project phase.

### **5.3 Independent External Peer Review (IEPR) Type II Safety Assurance Review (SAR)**

This project will be subject to IEPR guidelines in accordance with EC 1165-2-209 on the basis of risk to human life and safety. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. The circumstances requiring a Type II IEPR are described in Appendix E of EC 1165-2-209. Levee modifications in the scale proposed for Alvarado require a Type II IEPR SAR.

#### **5.3.1 IEPR Type II SAR Team**

EC 1165-2-209 states that IEPR Teams are to be comprised of independent, recognized experts from outside the USACE in the appropriate disciplines, representing a balance of expertise suitable for the review being conducted; and that the RMO and the local district are responsible for establishing and contracting for the IEPR services. However, when a non-Federal interest (such as a Project Sponsor) undertakes a study, design, or implementation of a Federal project, or requests permission to alter a Federal project, the non-Federal interest is required to undertake, at its own expense, any IEPR that the Government determines would have been required if the Government were doing the work. The Project Sponsor will contract with a second A/E firm to conduct the required IEPR. The Project Sponsor is aware that the selection of IEPR review panel members must be based in the National Academy of Science (NAS) Policy which sets the standard for “independence” in the review process. The RMO and the local district retain responsibility for approving the composition and makeup of the IEPR team.

The IEPR undertaken by a non-Federal Interest will be submitted as part of the approval request package for review by USACE.

#### **5.3.2 Scope of Type II IEPR Reviews**

The general purpose of the IEPR is to consider the adequacy, appropriateness, and acceptability of the design in assuring public health, safety, and welfare. The IEPR will be a larger-scale, holistic review that encompasses the breadth of the project from start to finish. The IEPR SAR will address the underlying planning, engineering, safety assurance, economics, and environmental analyses performed, not just one aspect of the project. A SAR is required for any project where potential hazards pose a significant threat to human life. This includes all projects involving levees or dams. The local sponsor in coordination with the Corps, will develop the charge questions for the IEPR. Specifically, the reviewers will be given a Charge that includes the following:

## Alvarado Flood Risk Management – Modifications to Existing Project Review Plan

- Reviews should identify, explain, and comment upon the assumptions presented by the designer that underlie all the analyses, as well as evaluate the soundness of models, surveys, investigations, and methods. A review panel should bring important issues to the attention of the local sponsor and the Corps. Review panels should be able to evaluate whether the interpretations of analysis and the conclusions based on analysis are reasonable. However, review panels should be instructed to not present a final judgment on whether a project should be constructed or whether a particular operations plan should be implemented, as the Chief of Engineers is ultimately responsible for this final decision.
- Evaluate the general risk assessment and decisions regarding stability at Alvarado and the reasonableness and soundness of the engineering recommendations.
- Peer reviews, no matter how useful, should not be expected to resolve fundamental disagreements and controversies. Reviewers should aim to draw distinctions between criticisms of the regulations and guidelines and criticisms of how well the PDT conformed to the guidance. Reviews should focus on assumptions, data, methods, and models.
- Reviews will assist the PDT in making decisions, but reviewers should not be asked to make decisions. Reviewers should avoid findings that become “directives” in that they call for modifications or additional studies or suggest new conclusions and recommendations. Reviewers engaged in the review processes should be selected based upon their independence and professional expertise and should not be “stakeholders”.
- Review panels should highlight areas of disagreement and controversies that may need resolution.

The review will consist of specific items as designated by the RMO and the ATR team. In general, the reviewers will be required to:

- Focus on unique features and changes from the assumptions made and conditions that formed the basis for the design during the decision document phase.
- Evaluate whether the interpretations of analysis and conclusions based on analysis are reasonable.
- Offer their opinions as to whether there are sufficient analyses upon which to base a recommendation.
- For the E&D phase – focus on unique features and changes from the assumptions made and conditions that formed the basis for the design during the decision document phase. Address the following questions:
  - Do the assumptions made during the decision document phase for hazards remain valid through the completion of design as additional knowledge is gained and the state-of-the-art evolves?
  - Do the project features adequately address redundancy, resiliency, or robustness with an emphasis on interfaces between structures, materials, members, and project phases?
  - Do the project features and/or components effectively work as a system?

- The city will make a risk informed decision on whether to undertake additional IEPR reviews in the construction phase. The proposed modifications are not complex from a constructability perspective or involve skills and processes not commonly used in civil works construction. The Corps construction staff will make periodic quality assurance inspections during the construction of critical features such as during the levee realignment. The construction contractor and construction manager/designer roles in QC/QA will be reviewed as part of the bid documents.

## **5.4 Methodology and Model Certification**

EC 1165-2-209 requires certification (for Corps models) or approval (for non-Corps models) of planning models used for all planning activities. Since this project is not in the planning phase, model review and certification are not required; however, it is expected that the A/E firm hired by the Project Sponsor to prepare the design, engineering, and construction documents will utilize industry standard software programs, including USACE HEC programs. The A/E design firm will be required to identify in the Design Documentation Report all design software that is utilized.

## **5.5 Policy Compliance / Legal Review Team**

Policy guidance and legal reviews will be conducted in accordance with the HQUSACE memorandum *Clarification Guidance on the Policy and Procedural Guidance for the Approval of Modifications and Alterations of Corps of Engineer Projects* dated November 17, 2008. The Corps project manager and the District Levee Safety Officer will be the primary Section 408 policy reviewers for the District. Policy requirements have been coordinated upfront with the sponsors A/E firm. The ATR environmental specialist has provided NEPA compliance guidance to the local sponsor and will conduct compliance and adequacy reviews as part of the ATR. District Counsel will conduct their own review and, per guidance, any decision document forwarded by the District for higher authority review and approval will be accompanied by a legal sufficiency certification from the District Counsel. MSC reviewers will conduct quality assurance review of the Districts policy and legal reviews and recommendations.

## **6 Method of Providing Review Comments**

### **6.1 Design Quality Control (DQC)**

Per *Section 5.1 Design Quality Control*, the Design Quality Control reviews will be managed in accordance with Barr Engineering's organization's Quality Control Plan. Use of DrChecks for the A/E DQC comments is not mandated, although copies of comments/results of each internal DCQ review that is performed will be provided to the ATR team.

### **6.2 Agency Technical Review (ATR)**

#### **6.2.1 Documentation of ATR**

ATR comments and responses will be recorded in the DRChecks portion of the ProjNet System ([www.projnet.org](http://www.projnet.org)). Upon receipt of the ATR comment memorandum, the PDT will develop responses to

the specific concerns and coordinate those responses with the ATR team through MVD. The ATR documentation in DrChecks will include the text of each ATR concern, the design team response, a brief summary of the pertinent points in any ensuing discussion, including any vertical coordination, and lastly the agreed upon resolution. Documentation of the ATR will be included with the submission of the reports to MVD and HQUSACE. All comments resulting from the ATR will be resolved prior to advertising, bidding, or completion of the design process. The report will be accompanied by a certification, indicating that the ATR process has been completed and that all technical issues have been resolved.

ATR reviewers, especially during the earlier technical reviews, oftentimes find many items/issues in the products that are not critical per the scope/intent of an ATR. ATR Reviewers shall use the guidance outlined in **Attachment 2 – Guidance for Reviews** in deciding which comments should be conveyed via formal and informal methods.

Comments should be limited to those that are required to ensure adequacy of the product, and consistent with the design standards in the PMP. The comments should not include personal preference, alternative ways to complete analysis, or other items that are “nice” to do unless they are indirect violation of Corps policy. The four key parts of a quality review comment normally include:

- The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
- The basis for the concern – cite the appropriate law, ASA (CW)/USACE policy, guidance or procedure that has not been properly followed;
- The probable specific action needed to resolve the concern – identify the action(s) that must be taken to resolve the concern.
- ATR comments should not include:
  - Attempts to enforce personal preferences over otherwise acceptable practices, i.e., alternate solutions or analysis methods when the practitioners have already used appropriate methods to develop an adequate solution;
  - Any other issues that do not add value towards the implementation decisions and recommendations, or do not make the design safe, functional, or more economical.

### 6.2.2 ATR Issues

In some situations, especially addressing incomplete or unclear information, comments may seek clarification or try to assess whether further specific concerns may exist. The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical coordination, and lastly the agreed upon resolution. The ATR team will prepare a Review Report which includes a summary of each unresolved issue; each unresolved issue will be raised to the Chief of Engineering-Construction for resolution. Review Reports are considered an integral part of the ATR documentation and will:

- Include the charge to the reviewers;



## Alvarado Flood Risk Management – Modifications to Existing Project Review Plan

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

### 6.2.3 ATR Completion

ATR is considered complete and certified when all ATR concerns are either resolved or referred to the District's Chief of Engineering Division for resolution and the ATR documentation is complete. A sample ATR certification is included as **Attachment 1 – Sample ATR Certification Statement**.

### 6.3 Independent External Peer Review (IEPR)

IEPR comments and responses will be recorded (use of the DRChecks portion of the ProjNet System ([www.projnet.org](http://www.projnet.org)) is recommended but not required).

- The review team will prepare a review report. All review panel comments shall be entered as team comments that represent the group and be non-attributable to individuals. The team lead is to seek consensus, but where there is a lack of consensus, note the non-concurrence and why. A suggested report outline is:
  1. Introduction
  2. Composition of the review team
  3. Summary of the review during design
  4. Lessons learned in both the process and/or design
  5. Appendices for conflict of disclosure forms
  6. Appendices including any analyses or assessments of the adequacy and acceptability of the methods, models, and analyses used.
- All comments in the report will be finalized by the panel prior to their release to USACE for each review plan milestone.
- After receiving a report on a project from the peer review panel, the city of Alvarado and their engineering design consultant shall consider all comments contained in the report and prepare a written response for all comments and note concurrence and subsequent action or non-concurrence with an explanation. The city shall submit the panel's report and the engineers' responses to the Corps for ATR review. The final IEPR report shall be submitted to Corps as part of the final Section 408 approval request package.

This rehabilitation project is not expected to generate controversy similar to other larger flood risk management projects and the public, state and Federal agencies are expected to support the project and will participate in the project development. The plan is not anticipated to disseminate influential

Alvarado Flood Risk Management – Modifications to Existing Project  
Review Plan

scientific information or scientific assessment. The IEPR report and responses to the IEPR will be posted on the St. Paul District website and distributed as hard copies upon request.

## 7 Review Schedule and Review Costs

### 7.1 Review Plan Schedule

Review plan receives District approval	December 21, 2012
Draft Review Plan sent to MVD	December 29, 2012
MVD approves Review Plan	January 31, 2013
ATR begins on implementation documents (start point for ATR schedule below)	October 10, 2012

### 7.2 DQC Schedule

The DQC, which includes peer reviews and an operability, and environmental review, is accomplished prior to the final ATR. The schedule for completing major products for this project is as follows:

Plans Complete	October 1, 2012
Specifications Complete	October 1, 2012
DDR Complete	October 1, 2012
O&M Manual Updates Complete	Sep 2013

### 7.3 ATR Schedule and Cost

Following is the schedule for the ATR review (note- initial ATR review has already started):

MVD approves Review Plan	January 31, 2013
Charge approved by PDT and ATR Team	September 20, 2012
Review documents and charge sent to ATR Team	October 8, 2012
ATR DrChecks comments complete	+14 days
PDT DrChecks evaluations complete	+7 days
ATR backchecks complete; DrChecks closed	+14 days
ATR certification form signed	+7 days
ATR final report complete	“ ”

Funding within the Inspection of Completed Works program is insufficient to completely fund the technical and policy reviews required for the Chief of Engineers' approval of major levee modifications

Alvarado Flood Risk Management – Modifications to Existing Project  
Review Plan

undertaken under Section 408. Additional funds from Alvarado will be used to augment the Operation and Maintenance budgets of the St. Paul District and supporting Districts (if required) in accordance with the provisions of Section 214 of WRDA 2000, as amended. A Section 214 agreement has been executed with the City of Alvarado that provides \$49,100 to fund the required reviews.

## 7.4 IEPR Schedule and Cost

The schedule of the IEPR is anticipated to similar to the ATR schedule.

Following is an estimate of the cost for the IEPR review:

<b>Discipline</b>	<b>Estimated Labor Cost</b>
IEPR Team Leader	\$10,000
Supporting Disciplines	3 disciplines @ \$8,000 ea. =\$24,000
<b>TOTAL</b>	<b>\$34,000</b>

## 8 Review Teams

### 8.1 Design Quality Control (DQC) Reviewers

The drawing and specification products for this project were developed by Barr Engineering Company under a contract to the local sponsor. The A/E has submitted a Design Quality Control Plan (QCP), which includes team member information, and outlines the various levels of internal reviews the A/E will conduct.

<b>NAME</b>	<b>ORGANIZATION</b>	<b>DISCIPLINE</b>
Scott Sobiech, P.E.	Barr Engineering Company	Project Manager and Senior Water Resource Engineer
Mark Kretschner, P.E.	Barr Engineering Company	Senior Civil Engineer
Joel Swenson, P.E.	Barr Engineering Company	Geotechnical Engineer
Jed Greenwood, P.E.	Barr Engineering Company	Geotechnical Engineer
Whitney Hansen, P.E.	Barr Engineering Company	Structural Engineer
Brandon Barnes, P.E.	Barr Engineering Company	Water Resources Engineer

Alvarado Flood Risk Management – Modifications to Existing Project  
Review Plan

## 8.2 ATR Reviewers

The St. Paul District will provide an in-house team with appropriate technical qualifications to review the Barr Engineering products. Since review period may be short, the critical disciplines for ATR have an alternate person designated. The ATR report will include short resumes and qualifications of each of the ATR team members. ATR team resumes are available at:

<https://intranet.usace.army.mil/mvd/mvp/ec/pages/EC-staff-Bios.aspx>

NAME	DISTRICT	DISCIPLINE
Joseph Mose	CEMVP	Project Manager
Neil Schwanz, P.E.	CEMVP	Geotechnical (Primary)
Chris Behling, P.E.	CEMVP	Geotechnical (Alternate)
Kari Hauck, P.E.	CEMVP	Hydraulics (Primary)
Kent Hokens, P.E.	CEMVP	Structural (Primary)
Elizabeth Killian	CEMVP	Structural (Alternate)
Karl Berg, P.E.	CEMVP	Civil-Site-Utilities and ATR Leader
Megan McGuire/Ginny Gnabasik	CEMVP	Environmental - Cultural
John Albrecht	CEMVP	Real Estate
Rick Hauck, P.E.	CEMVP	Levee Safety (Primary)
Dana Werner	CEMVP	Levee Safety (Alternate)
Sheldon Edd	CEMVP	Construction

### 8.3 Independent External Peer Reviewers

The local sponsor has selected Short, Elliott, Hendrickson, Inc, to conduct the Type II IEPR SAR. The 550 staff strong company provides civil, environmental, transportation, drinking water, wastewater, and structural engineering; funding acquisition; planning and landscape design; architectural design; and technology and GIS services with water resource engineering being a significant portion of their practice. The scope of work (charge) and the qualifications of proposed team members were presented to and endorsed by the District's Review Planning Committee. Individual professional engineers assigned to the IEPR have experience specific to floodwall design and geotechnical evaluation of global stability. Additionally, the team assembled has experience specific to water resource projects in Minnesota and firsthand experience in FEMA certification and the Corps Section 408 major levee modification review and approval process.

NAME	ORGANIZATION	DISCIPLINE
Mark Angelo, PE	Short Elliott Hendrickson	Project Manager and IEPR Leader
Wayne Wambold, PE	Short Elliott Hendrickson	Geotechnical Engineer
Brad Woznak, PE	Short Elliott Hendrickson	Hydraulic Engineer
Jeff Johnson, PE	Short Elliott Hendrickson	Structural Engineer

## 9 Posting of Review Plans and Public Comment

Following approval by the MSC, this Review Plan will be posted to the internet under the District's "Review Plan" hyperlink.

## 10 History of Review Plan Updates

Version	Description & Location Within PMP of Revision	Approval Date	Approved By
Original RMP	Initially approved version		
Revision # ____			

## 11 Attachments

No.	Title / Description
1	Sample ATR Certification Statement
2	Guidance for Reviews

## **Attachment 1: Sample ATR Certification Statement**

The Agency Technical Review (ATR) has been completed for the Alvarado Flood Damage Reduction Project Modifications located at Alvarado, MN. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the Design Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks<sup>sm</sup>.

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Karl Berg, PE  
ATR Team Leader  
CEMVP-EC-D

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Date

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Joseph Mose  
Project Manager  
CEMVP-PM

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Date

### **CERTIFICATION OF AGENCY TECHNICAL REVIEW**

Significant concerns and the explanation of the resolution are as follows: [Describe the major technical concerns and their resolution]

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

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**Michael J. Bart, PE**  
Chief, Engineering Division  
CEMVP-EC

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**Date**

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## **Attachment 2: Guidance for Reviews**

### **1. General Guidance for PDT Members, DQC Reviewers, and ATR Reviewers**

In performing reviews of technical products, it is requested that you rationalize your comments as being either formal comments or informal comments, and that you use the appropriate tools/methods, as described below, for documenting and transmitting your comments.

**Formal comments** are those that will likely affect or impact: 1) a project's budget and/or schedule, 2) safety and/or security, or 3) conflict with laws, policy, and/or guidance. These types of comments shall be entered into DRCheckS<sup>®</sup>, which is the mandated system for submitting, tracking, and responding to comments on engineering and design products.

**Informal comments**, oftentimes considered to be courtesy comments, are those such as grammatical, editorial, and non-critical comments intended to alert the designer to items or issues that they may want to consider further. These types of comments can be passed along to the designer(s) by way of marked-up (aka red-lined) documents. A tool that is very handy to use for this purpose is the Comment and Markup feature in Adobe Reader/Acrobat, which is described in more detail in a later paragraph.

For both categories of comments, it is requested that Reviewers refrain from personal preference type comments unless there is a very strong basis for making the suggestion; in which case the rationale should clearly be stated. For instance if there is another way to do an analysis, but the way chosen by the PDT member is consistent with Corps guidance and best practices, then this can be provided informally for consideration but should not be a formal comment.

The ATR and DQC reviews are not intended to bring up other alternatives or other measures for consideration, they are to be focused only on the package presented to ensure that is compliant with Corps guidance and that there are no "red flag" issues that could cause project failure.

#### **1.1 Policy**

Policy guidance and objectives of design/technical reviews are defined in:

- |                |   |
|----------------|---|
| ER 1110-1-12   | Quality Management                              |
| ER 1110-1-8159 | Engineering and Design, DRCheckS <sup>®</sup>   |
| ER 1110-2-1150 | Engineering and Design for Civil Works Projects |

#### **1.2 Formal Comments**

As stated above, DRCheckS<sup>®</sup>, which is available on <https://www.projnet.org/projnet/>, should be used for formal review comments and comment closure in accordance with ER 1110-1-8159. All major issue comments that require full and formal closure must be put into DRCheckS<sup>®</sup>. Reviewers are strongly

encouraged to contact Project Delivery Team (PDT) members directly to clarify any confusion before making a review comment. Formal review comments should contain these principal elements, known as the four part comment:

- A clear statement of the concern
- The basis for the concern, such as law, policy, or guidance
- Significance of the concern
- Specific actions needed to resolve the comment

Reviewers are also strongly encouraged to only include one (1) issue/item per each DRCheckS® comment. When more than one issue/item is included per comment, the comment Evaluators may not be able to properly/satisfactorily address multi-part comments. Hence, the comment Backcheckers may not be able to close a comment.

If the four part comment is not being followed ATR reviewers may be asked to go back and ensure that this process is being followed.

### **1.3 Informal Comments**

For informal review comments on documents that are furnished in PDF format, Reviewers are strongly encouraged to use the “Comment and Markup” feature that is part of current Adobe Reader / Adobe Acrobat programs. Adobe’s Comment and Markup feature allows reviewers to capture and record informal comments, such as editorial comments, suggestions, and questions. In addition, designers can respond to comments and closeout comments. At the end of a review the Project Manager can generate a report that indicates for each comment whether it was “cancelled”, “accepted”, “completed”, or “rejected”. Tips on how to use this feature are provided in a subsequent paragraph.

Please keep in mind that a fundamental tenet of “informal comments” is that a response by the receiver of a comment is not required. They may accept, reject, or partially use a comment at their own discretion.

### **1.4 Review Objectives**

The objective of Quality Reviews is to insure that the product is consistent with established criteria, guidance, procedures, and policy. There are six primary objectives and two secondary objectives of a DQC review.

**The primary objectives are:**

- a. To ensure that the problem identification, plan formulation, and design concepts are valid;
- b. To ensure that the recommended plan is feasible and will be safe and functional;
- c. To ensure that a reasonable cost estimate has been developed;
- d. To ensure that the technical analyses are correct;
- e. To ensure that the product complies with policy requirements, and
- f. To ensure that it complies with accepted practice within USACE.

**The secondary objectives are:**

- a. To ensure that the recommended plan is an economical solution or meets the intent of its authorization.
- b. To assist the designer/developer of the product in catching minor quality control items that may be overlooked in the preparation of the products.

## **1.5 Types of Review Comments and Appropriate Method for Transmitting Comments**

Issues/Items that should not be formally commented on using the DRCheckS<sup>®</sup> system but should be passed along to the appropriate designer/developer in an informal, courtesy copy manner:

- a. Spelling, grammar, format, or language in the report. (This type of comment may be made informally, in parallel with the official technical review process. )
- b. Minor numerical errors that do not affect adequacy of the results.
- c. Alternate design solutions or analysis methods (i.e., reviewer preference), where the project designers have already used appropriate methods to develop an adequate solution.
- d. Any other issues which will not add value by making the project safe, functional, or more economical.

Issues/Items that should be formally commented on using the DRCheckS<sup>®</sup> system:

- a. Is the proposed solution safe, functional, constructible, economical, and reasonable?
- b. Does the design follow USACE engineering criteria? (If not, have proper waivers been obtained?)
- c. Are appropriate analysis methods being used?
- d. Are the basic design assumptions valid?
- e. Are the calculations initialed by designers and checkers, and are results essentially correct?
- f. Is the engineering content sufficiently complete, and does it provide an adequate basis for construction?
- g. Is the design documentation adequate?

## **1.6 Commenting Process**

The DrChecks portion of the ProjNet DrChecks system shall be used to submit critical DQC and ATR comments as defined above. When the Reviewer is notified that a Review has been opened in DrChecks, the reviewer shall promptly perform the review of the provided documents. Use of appropriate guidelines and procedures should result in a reasonable volume of review comments. If a Reviewer chooses to provide "Courtesy Comments", such as those listed above, these types of comments should be furnished to the designer/developer outside of the DrChecks system, such as via Adobe's Comment and Markup Feature as described in the following section. If these types of "informal" comments are passed along to the designer/developer, the commenter could choose to add one comment in DrChecks stating that "informal/courtesy comments were passed along to the

appropriate designer/developer” and that formal comment responses and backchecks are not necessary.

## **1.7 Comment Resolution**

Comments do not necessarily have to be complied with, but each comment must be resolved, not ignored. When PDT member disagrees with a comment, the best means of resolution is a discussion between the PDT member and the Reviewer. When this does not result in an appropriate resolution, the issue should be elevated through the PDT member’s chain of command. The Review Team does not have authority to enforce comments; authority for comment resolution lies in the functional chain of command. The PM and the Review Team Leader should jointly ensure that each comment has been resolved. The final comments, and the resolution of these comments, should be included in the project documentation. Significant issues that are raised by the reviewers, and the resolution of these issues, should be included with the submittal of the project documents.

## **1.8 Comment Backcheck**

When the Reviewer is notified that a Review has been opened in DrChecks for Backchecking, the Reviewer shall promptly perform a review of the responses to the comments that he/she made. If the Reviewer is satisfied with the response, the Reviewer shall “Close” the comment and add a statement to the effect that “the comment/concern has been satisfactorily addressed by the designer revising the.....”. If the Reviewer is not satisfied with the response, the comment shall be left as “Open” and the reviewer shall immediately contact the Review Team Leader and the person that provided the comment resolution. It is imperative that comments be resolved promptly and ultimately closed out or withdrawn.

## **2. How to use Adobe’s Comment and Markup Feature**

The Project Manager places the PDF documents on a server location so that all reviewers can see and reply to comments as they are made.

Reviewers may download the files from the web server to your local drive or network drive. As long as you are within the corps firewall, you can still retrieve and post comments seamlessly to the remote server. This will speed up access time. You will need Adobe Acrobat 8.0 or Adobe Reader 8.0, or later, to review the documents. If you do not have access to the location of the shared review PDF files, contact the Project Manager.

Follow these steps to review the PDF documents:

- a. Open or download the file from the location as directed by the Project Manager. All comments made as of that time are automatically retrieved and shown or included in the documents.
- b. The first time you open a file, you will be asked for your name, email, and occupation. This will tag your name with your comments. Make your comments using the Adobe Comment & Markup tools.

- c. After making comments, click Publish Comments to make your comments available to other reviewers.



- d. To see the most recent comments from everyone, click Check for New Comments.


## 2.1 Tips for Project Managers

The following steps provide a quick overview of common review set-up tasks. For more detailed information, see the Help files in Adobe Acrobat under the topic of Review and Comment.

*Note: Acrobat Professional is required to enable commenting for Adobe Reader users in shared reviews and email-based reviews.*

### 2.1.1 Start an email review


An email-based review lets you track review status and merge received comments into the PDF.

- 1 Click Review & Comment and  choose Attach For Email Review.
- 2 If prompted, enter your identity information to create a reviewer profile.
- 3 Follow the on-screen instructions to select the PDF, invite reviewers, and send the email invitation. If your email application doesn't send email automatically, you may need to answer alert messages and switch to your email application to finish sending the message.

### 2.1.2 Start a shared review


A shared review allows reviewers, including those using Adobe Reader, to see and respond to others' comments during the review.

*Important: To conduct a shared review, you and your reviewers need write access to a shared comment server.*

- 1 Click Review & Comment and  choose Send For Shared Review.
- 2 If prompted, enter your identity information to create a reviewer profile.
- 3 Follow the on-screen instructions to select (or add) a server, select the PDF, invite reviewers, and send the email invitation.


### 2.1.3 Invite additional reviewers

If you initiated a review, you can invite more reviewers. If you are a reviewer, ask the initiator to add reviewers so the initiator can track all reviewers and receive notification when comments are received.

- 1 Click Review & Comment and  choose Review Tracker.
- 2 Select the desired PDF under Reviews I've Sent, and click Add Reviewers.
- 3 Follow the on-screen instructions to add email addresses, change the message as needed, and send the invitation.

### 2.1.4 Track and manage reviews

The Review Tracker provides information for all documents that you've sent and received for review. Use the Review Tracker to rejoin a review, send a reminder, or invite additional reviewers.

- 1 Click Review & Comment and  choose Review Tracker.
- 2 Select the desired PDF on the left.
- 3 Do any of the following:

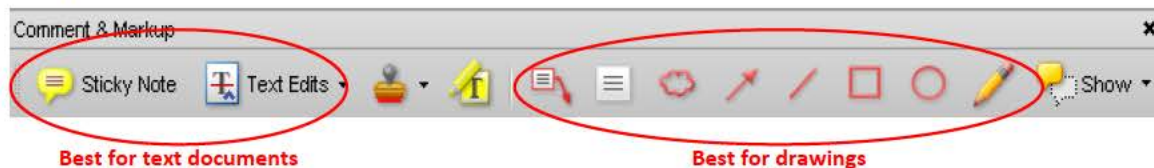
To rejoin a review, double-click the PDF.

To send a message, click Email All Reviewers or Email Initiator.

To invite additional reviewers, click Add Reviewers.

## 2.2 Tips for Reviewers

The following steps provide a quick overview of common review and commenting tasks. For more detailed information, see the Help files in Adobe Acrobat or Adobe Reader under the topic of Review and Comment. The Comment & Markup toolbar has an assortment of tools to assist with making various types of annotations and comments.



### 2.2.1 Participate in an email review

When you open the PDF attachment in an email review, a tracked copy of the PDF opens with a document message bar, a Send Comments button, and a Comment & Markup toolbar.

*Important:* If you're prompted to connect to a server when you open the PDF, you've been invited to a [shared review](#).

- 1 Open the PDF attachment from your email application.
- 2 Use commenting tools to add comments.
- 3 Save the PDF, and then click Send Comments.

### 2.2.2 Participate in a shared review


When you open the shared PDF, commenting tools and a document message bar with instructions also open. In a shared review, you can see all reviewers' comments that have been published.

- 1 Open the PDF attachment or link.
- 2 Click Connect, and type your login name and password, if prompted.

- 3 Type your name, email address, and job title to create a reviewer profile, if prompted.
- 4 Add comments.
- 5 When you want to share your comments, click Publish Comments.

### 2.2.3 Add a sticky note


The sticky note is the most common type of comment.

- 1 Click Review & Comment in  the Tasks toolbar, and then choose Add Sticky Note.
- 2 Type your comment in the pop-up note. (Your comment remains if you close the note.)
- 3 (Optional) Drag the sticky note icon or pop-up window to a new location.

You can also add other types of comments, such as [markups](#) and [text edits](#).

### 2.2.4 Mark up text with edits

Add editing markups to indicate where text should be inserted, deleted, or replaced.

- 1 Click Review & Comment  and choose Comment & Markup Tools > Text Edits Tool.
- 2 Select the text you want to edit or place the insertion point where you want to add text.
- 3 Move the pointer over the icon that appears, and choose an option from the pop-up menu, or simply begin typing.

### 2.2.5 Create drawing markups

You can add lines, arrows, and shapes to a PDF by using the drawing markup tools.

- 1 Choose Tools > Comment & Markup, and choose the desired tool.
- 2 Draw in the PDF. For example, click and drag to form a line, arrow, or rectangle.
- 3 (Optional) Using the Select tool, double-click the markup, and then type a comment in the pop-up note.

To change properties, such as line color and width, right-click/Control-click the markup and choose Properties.

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## Review Plan Checklist

**Date:** 8/2/2012  
**Originating District:** St. Paul District  
**Project/Study Title:** Alvarado Flood Risk Management – Modifications to Existing Project  
**PWI #:** 372452  
**District POC:** Jim Mosner  
District Quality Manager

For levee-related projects, the Risk Management Center is the RMO; and for the ATR and Type II IEPR reviews. Any evaluation boxes checked 'No' indicate the RP possibly may not comply with EC 1165-2-209 and should be explained. Additional coordination and issue resolution may be required prior to MSC approval of the Review Plan.

REQUIREMENT	REFERENCE	EVALUATION
1. Is the Review Plan (RP) a standalone document?	EC 1165-2-209, Appendix B, Para 4a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
a. Does it include a cover page identifying it as a RP and listing the project/study title, originating district or office, and date of the plan?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b. Does it include a table of contents?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
c. Is the purpose of the RP clearly stated and EC 1165-2-209 referenced?	EC 1165-2-209 Para 7a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Alvarado Flood Risk Management Project  
Review Plan Review Plan Checklist

REQUIREMENT	REFERENCE	EVALUATION
d. Does it reference the Project Management Plan (PMP) of which the RP is a component including P2 Project #?	EC 1165-2-209 Para 7a (2)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  The Corps involvement in effort is under the Section 408 authority. A P2 number has not been assigned and PMP has not been created since the extent of the Corps efforts are covered by this Review Plan.
e. Does it include a paragraph stating the title, subject, and purpose of the work product to be reviewed?	EC 1165-2-209 Appendix B, Para 4a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
f. Does it list the names and disciplines in the home district, MSC and RMO to whom inquiries about the plan may be directed?*	EC 1165-2-209, Appendix B, Para 4a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<i>*Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated.</i>		
2. Documentation of risk-informed decisions on which levels of review are appropriate.	EC 1165-2-209, Appendix B, Para 4b	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
a. Does it succinctly describe the three levels of peer review: District Quality Control (DQC), Agency Technical Review (ATR), and Independent External Peer Review (IEPR)?	EC 1165-2-209 Para 7a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b. Does it contain a summary of the CW implementation products required?	EC1165-2-209 Para 15	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Alvarado Flood Risk Management Project  
Review PlanReview Plan Checklist

REQUIREMENT	REFERENCE	EVALUATION
c. DQC is always required. The RP will need to address the following questions:	EC1165-2-209 Para 15a	
i. Does it state that DQC will be managed by the home district in accordance with the Major Subordinate Command (MSC) and district Quality Management Plans?	EC1165-2-209 Para 8a	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  The RP states that the DQC will be conducted by the A/E firm which is producing the design, engineering, and construction documents; this is consistent with previous projects under the Section 408 authority.
ii. Does it list the DQC activities (for example, 30, 60, 90, BCOE reviews, etc)	EC 1165-2-209 Appendix B (1)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  The A/E firm is only planning a DQC of the final products.
iii. Does it list the review teams who will perform the DQC activities?	EC 1165-2-209 Appendix B, Para 4g	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
iv. Does it provide tasks and related resource funding and schedule showing when the DQC activities will be performed?	EC 1165-2-209 Appendix B, Para 4c	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
d. Does it assume an ATR is required and if an ATR is not required does it provide a risk based decision of why it is not required? If an ATR is required the RP will need to address the following questions:	EC1165-2-209 Para 15a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  It is stated that an ATR is required.
i. Does it identify the ATR District, MSC, and RMO points of contact?	EC 1165-2-209 Para 7a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A



Alvarado Flood Risk Management Project  
Review PlanReview Plan Checklist

REQUIREMENT	REFERENCE	EVALUATION
<p>ii. Does it identify the ATR lead from outside the home MSC?</p>	<p>EC 1165-2-209 Para 9c</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>iii. Does it provide a succinct description of the primary disciplines or expertise needed for the review (not simply a list of disciplines)? If the reviewers are listed by name, does the RP describe the qualifications and years of relevant experience of the ATR team members?*</p> <p><i>*Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated.</i></p>	<p>EC 1165-2-209 Appendix B, Para 4g</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p>iv. Does it provide tasks and related resource, funding and schedule showing when the ATR activities will be performed?</p>	<p>EC 1165-2-209 Appendix C, Para 3e</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p>v. Does the RP address the requirement to document ATR comments using Dr Checks?</p>	<p>EC 1165-2-209 Para 7d (1)</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p>e. Does it assume a Type II IEPR is required and if a Type II IEPR is not required does it provide a risk based decision of why it is not required including RMC/ MSC concurrence? If a Type II IEPR is required the RP will need to address the following questions:</p>	<p>EC1165-2-209 Para 15a</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>It is stated that a Type II IEPR is required.</p>
<p>i. Does it provide a defensible rationale for the decision on Type II IEPR?</p>	<p>EC 1165-2-209 Para 7a</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>

Alvarado Flood Risk Management Project  
Review Plan Review Plan Checklist

REQUIREMENT	REFERENCE	EVALUATION
ii. Does it identify the Type II IEPR District, MSC, and RMO points of contact?	EC 1165-2-209 Appendix B, Para 4a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A  In conformance with other projects under the Section 408 authority, it states that the Project Sponsor is responsible for hiring a suitable IEPR entity. Information about this entity will be added to the RP when it becomes known. Information about the MSC and RMO is included.
iii. Does it state that for a Type II IEPR, it will be contracted with an A/E contractor or arranged with another government agency to manage external to the Corps of Engineers?	EC 1165-2-209 Appendix B, Para 4k (4)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
iv. Does it state for a Type II IEPR, that the selection of IEPR review panel members will be made up of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of expertise suitable for the review being conducted?	EC 1165-2-209 Appendix B, Para 4k(1) and Appendix E, Para's 1a & 7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
v. Does it state for a Type II IEPR, that the selection of IEPR review panel members will be selected using the National Academy of Science (NAS) Policy which sets the standard for "independence" in the review process?	EC 1165-2-209 Para 6b (4) and Para 10b	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

Alvarado Flood Risk Management Project  
Review Plan Review Plan Checklist

REQUIREMENT	REFERENCE	EVALUATION
vi. If the Type II IEPR panel is established by USACE, has local (i.e. District) counsel reviewed the Type II IEPR execution for FACA requirements?	EC1165-2-209 Appendix E, Para 7c(1)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
vii. Does it provide tasks and related resource, funding and schedule showing when the Type II IEPR activities will be performed?	EC1165-2-209 Appendix E, Para 5a	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
viii. Does the project address hurricane and storm risk management or flood risk management or any other aspects where Federal action is justified by life safety or significant threat to human life?	EC1165-2-209 Appendix E, Para 2	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Is it likely? If yes, Type II IEPR must be addressed.		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
ix. Does the RP address Type II IEPR factors?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Factors to be considered include:		
• Does the project involve the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent setting methods or models, or presents conclusions that are likely to change prevailing practices?		
• Does the project design require redundancy, resiliency and robustness		
• Does the project have unique construction sequencing or a reduced or overlapping design construction schedule; for example, significant project features accomplished using the Design-Build or Early Contractor Involvement (ECI) delivery systems.		



Alvarado Flood Risk Management Project  
Review Plan Review Plan Checklist

REQUIREMENT	REFERENCE	EVALUATION
f. Does it address policy compliance and legal review? If no, does it provide a risk based decision of why it is not required?	EC 1165-2-209 Para 14	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
3. Does the RP present the tasks, timing, and sequence of the reviews (including deferrals)?	EC 1165-2-209, Appendix B, Para 4c	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
a. Does it provide an overall review schedule that shows timing and sequence of all reviews?	EC 1165-2-209, Appendix C, Para 3g	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b. Does the review plan establish a milestone schedule aligned with the critical features of the project design and construction?	EC 1165-2-209, Appendix E, Para 6c	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4. Does the RP address engineering model certification requirements?	EC 1165-2-209, Appendix B, Para 4i	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
a. Does it list the models and data anticipated to be used in developing recommendations?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
b. Does it indicate the certification /approval status of those models and if certification or approval of any model(s) will be needed?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
c. If needed, does the RP propose the appropriate level of certification/approval for the model(s) and how it will be accomplished?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

Alvarado Flood Risk Management Project  
Review Plan Review Plan Checklist

REQUIREMENT	REFERENCE	EVALUATION
<p>5. Does the RP explain how and when there will be opportunities for the public to comment on the study or project to be reviewed?</p> <p>a. Does it discuss posting the RP on the District website?</p> <p>b. Does it indicate the web address, and schedule and duration of the posting?</p>	<p>EC 1165-2-209, Appendix B, Para 4d</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p>The RP states that it will not be posted on the District website.</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A</p>
<p>6. Does the RP explain when significant and relevant public comments will be provided to the reviewers before they conduct their review?</p> <p>a. Does it discuss the schedule of receiving public comments?</p> <p>b. Does it discuss the schedule of when significant comments will be provided to the reviewers?</p>	<p>EC 1165-2-209, Appendix B, Para 4e</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A</p>



Alvarado Flood Risk Management Project  
Review Plan Review Plan Checklist

REQUIREMENT	REFERENCE	EVALUATION
<p><b>7. Does the RP address whether the public, including scientific or professional societies, will be asked to nominate professional reviewers?*</b></p> <p>a. If the public is asked to nominate professional reviewers then does the RP provide a description of the requirements and answer who, what, when, where, and how questions?</p> <p><i>* Typically the public will not be asked to nominate potential reviewer</i></p>	<p>EC 1165-2-209, Appendix B, Para 4h</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A</p>
<p><b>8. Does the RP address expected in-kind contributions to be provided by the sponsor?</b></p> <p>a. If expected, in-kind contributions are to be provided by the sponsor, does the RP list the expected in-kind contributions to be provided by the sponsor?</p>	<p>EC 1165-2-209, Appendix B, Para 4j</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>
<p><b>9. Does the RP explain how the reviews will be documented?</b></p> <p>a. Does the RP address the requirement to document ATR comments using Dr Checks and Type II IEPR published comments and responses pertaining to the design and construction activities summarized in a report reviewed and approved by the MSC and posted on the home district website?</p> <p>b. Does the RP explain how the Type II IEPR will be documented in a Review Report?</p>	<p>EC 1165-2-209, Para 7d</p> <p>EC 1165-2-209 Appendix B , Para 4k (14)</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p>

Alvarado Flood Risk Management Project  
Review Plan Review Plan Checklist

REQUIREMENT	REFERENCE	EVALUATION
c. Does the RP document how written responses to the Type II IEPR Review Report will be prepared?	EC 1165-2-209 Appendix B, Para 4k (14)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
d. Does the RP detail how the district/PCX/MSD and CECW-CP will disseminate the final Type II IEPR Review Report, USACE response, and all other materials related to the Type II IEPR on the internet?	EC 1165-2-209 Appendix B, Para 5	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A  Distribution of the final IEPR Review Report will be the responsibility of the Project Sponsor.
10. Has the approval memorandum been prepared and does it accompany the RP?	EC 1165-2-209, Appendix B, Para 7	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No



**DEPARTMENT OF THE ARMY**  
**RISK MANAGEMENT CENTER, CORPS OF ENGINEERS**  
**12596 W. BAYAUD AVENUE SUITE 400**  
**LAKEWOOD, CO 80228**

REPLY TO  
ATTENTION OF  
CEIWR-RMC-WD

CEIWR-RMC

11 February 2013

MEMORANDUM FOR: Commander, St. Paul District, ATTN: CEMVP-EC-D

SUBJECT: Risk Management Center Endorsement – Alvarado, MN Flood Risk Management  
Modifications to Existing Project, Section 408 Review Plan

1. The Risk Management Center (RMC) has reviewed the revised Review Plan (RP) for the Alvarado, MN Section 408 Project, dated 26 December 2012, and concurs that this RP provides for an adequate level of peer review and complies with the current peer review policy requirements outlined in EC 1165-2-214 "Civil Works Review ", dated 15 December, 2012.
2. This review plan was prepared by the St. Paul District, reviewed by the Mississippi Valley Division and the RMC, and all review comments have been satisfactorily resolved.
3. The RMC endorses this document to be approved by the MSC Commander. Upon approval of the RP, please provide a copy of the approved RP, a copy of the MSC Commander's approval memorandum, and a link to where the RP is posted on the District website to Tom Bishop, RMC Senior Review Manager ([thomas.w.bishop@usace.army.mil](mailto:thomas.w.bishop@usace.army.mil)).
4. Thank you for the opportunity to assist in the preparation of this RP. Please coordinate all aspects of the Type II IEPR. For further information, please do not hesitate to contact me at (303) 963-4556.

Sincerely,

THOMAS W. BISHOP, P.E.  
Senior Review Manager  
Risk Management Center

CF:  
CEIWR-RMC-ZA (Mr. Snorteland)  
CEMVD (Division Quality Manager)